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ABSTRACT

Thirty personnel involved in various stages of the Training Extension Course (TEC) design, development, and distribution process were interviewed by telephone to determine the major problems perceived within each stage of the program, which provides validated extension training wherever U.S. soldiers are stationed. Those interviewed included TEC coordinators, project officers, school managers, contractors, and managers of learning centers. The most common problem are mentioned by those groups was school/contractor differences. Because of the significant impact this area has on the success of the TEC contract, the establishment and maintenance of rapport between school and contractor is vital; means by which these differences and problems in other areas might be resolved were discussed with respondents. (Author/CMV)

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IF ANYTHING CAN GO WRONG,

MAYBE IT WILL

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ABSTRACT

A sample of personnel involved in various aspects of the TEC design, development, and distribution process were interviewed in order to determine major problems perceived within each stage. Personnel included TEC coordinators, project officers, school managers, contractors, and learning centers. The most common problem area mentioned by these groups was with school/contractor differences. Because of the significant impact this area has on the success of the TEC contract, the establishment and maintenance of rapport between school and contractor is seen as vital. Means by which these differences and other problem areas might be resolved were discussed with respondents.

If Anything Can Go Wrong, Maybe It Will

The impetus for this study grew out of the fact that the first Training Extension Course (TEC) contract was with Florida State University in 1973 for two lessons. The purpose of this trial was to exercise the contract with its approval cycles and to experiment with the features of the Beseler Cue-See. Since then the program has expanded to all Training and Doctrine Command (TRADOC) schools and provides validated extension training wherever our soldiers are stationed.

Due to the profusion of TEC and Improved Technical Documentation and Training (ITDT) type of solicitations, the kinds of problems and solutions experienced by personnel involved in various aspects of the design, development, and distribution process are critical to the ultimate success of ISD projects. Many hardware contracts now require a validated courseware package. These ITDT and similar training requirements could profit from TEC's years of experience. The purpose of this study was to discover potential and current problems experienced by TEC coordinators, school managers, contractors, and learning centers while involved in TEC contracts that could possibly be generalized to similar training situations. A second feature of the present study was to elicit possible solutions that could be implemented to alleviate problems that currently exist or that may occur.

Method

Sample

Thirty individuals representative of TEC personnel in following areas were interviewed. The majority of these interviews were conducted

during the month of July, 1978. Members of the following groups were surveyed:

- Naval Training and Equipment Center (NTEC). NTEC houses the contracting officer for the federal government.
- Army Training and Support Center (ATSC-TEC). ATSC-TEC houses the COTR who is the technical representative.
- TRADOC schools. TRADOC schools are responsible for preparing the Contract Co-ordinator's Summary Sheet (CCSS) and for supervising TEC contractors.
- TEC Contractors. Contractors bid on TEC contracts and interact primarily with subcontractors and TRADOC schools.
- Learning Centers. Learning Centers are the actual users of completed TEC lessons.

Procedures

The method used in data collection was the telephone interview. This method was perceived to be more flexible and efficient than the self-administered type of questionnaire. Questions were based on particular areas of concern specified for each group. Respondents were asked to react to these areas in terms of major problems, drawbacks, and limitations experienced, and methods by which the problem could be or is currently being resolved. Problems common to respondents within each group were then summarized. Possible solutions to various problems were also delineated. Interviews ranged from thirty to forty-five minutes in length and stressed the anonymity of the respondent.

Results

The problem of most pressing concern to a majority of the groups contracted revolved around school/contractor differences. Representatives of NTEC, ATSC-TEC, contractors and TRADOC schools all cited instances of disagreement or discord between these two groups. This is not to say that

the lack of harmony was unexpected or is avoidable in future negotiations. It was recognized across the sample that a certain amount of conflict is inevitable when the number and types of personalities involved is great, which is certainly the case in this particular situation. There are different interests, responsibilities, and talents represented in the interaction between school and contractor, all working toward the goal of a complete and valid lesson. Add to these personality variables the geographical distance separating these individuals and reaching the goal becomes an even more difficult task.

The school/contractor differences catagory proved to be a kind of "catch-all" within which more specific concerns were voiced. For example, school/contractor differences were found in such activities as preparation and provision of Government Furnished Material (GFM), Lesson Content Analysis Review (LCAR), Kit Design Approach (KDA), validation of draft materials, and approval of final products.

It was found in this study that these particular problems can usually be traced back to the inability of the schools to accurately communicate to the contractor what is desired in terms of learner outcome performance. The main reason for this inability appears to be the lack of training of many school personnel in basic instructional design concepts such as criterion-referenced test items, task analysis, and formulating objectives. Consequently, much of the GFM received by contractors is criticized as ambiguous or containing erroneous information. This difficulty in correctly communicating the task to be taught leads to problems in subsequent components of the TEC lesson. For example, the content validity of the LCAR and the KDA is directly dependent on the quality of the GFM. If the schools

cannot guarantee that all of the tasks that they want taught are contained in the LCAR and KDA, then the content of the completed lesson is jeopardized. Several respondents recommended that the developer along with the SME actually watch the task performed that is to be taught. This will help ensure that the lesson is designed to reflect the correct performance of the task.

It is obvious from the above statement that the development of rapport between school and contractor should be initiated early in the lesson design and development process. The quality of this interaction has significant impact on the total success of the TEC contract. An adversay relationship can be detrimental to the entire process.

In an effort to facilitate contractor approval of GFM, GFM is now available in most cases for review to contractors before the proposal is let. Also, the TEC Managers' Conference and on-site representatives are two innovations that have proven to be successful in reducing conflict and facilitating agreement between schools and contractors.

TEC Managers' Conferences serve the purpose of gathering together representatives from the government TRADOC school and contractors in order that general issues can be clarified and particular points of controversy resolved. Although some negative features of these conferences were identified by respondents i.e., feeding negativism, important issues overwhelmed by mundane ones, the conferences in general were credited with solving or avoiding more problems than they created.

On-site representatives act as liaisons between contractor and school. They work with the subject matter expert (SME) at a particular school. S/he has the authority to make script and storyboard changes as required on-site. The position helps to alleviate the feeling on the part of the

school that they are doing the contractor's work. It shoud be noted, however, that the role of on-site representative can be prone to ambivalent loyalties and actions. Although he is paid by the contractor, he must work day to day with the school.

Another problem area encountered which again falls under the school/contractor differences rubric is that of trial validations of TEC lessons. It appears to be extremely difficult for schools to acquire the correct type and number of target audience and/or equipment for the trial validations. Consequently, time and money are wasted and the quality of the lesson suffers.

Although there were no easy solutions offered by respondents to the problem of gathering an adequate number of the target audience for validating lessons, the question of the correct type of target audience drew some reactions. For both design and evaluation purposes an accurate description of the learner audience is imperative. A number of respondents stated that variables such as levels of education, ethnicity, sex, and years of experience do not adequately describe learner characteristics. Examples of additional variables that would "round out" the description are: type of testing, type of media, and type of supervision soldiers are accustomed to.

The last problem area to be discussed in the category of school/contractor differences is that of final or master materials. It appears that in many cases, school personnel do not make changes in the lesson until it is near final form. Then the decision must be made whether the particular revisions are the responsibility of the contractor or school.

This seems to be a widespread problem with regard to artwork. Depending upon who is reviewing the lesson and their amount of expertise

in the performance area, various levels of artwork are accepted. This "art" problem is aggrevated by the fact that artists' interpretations of developers' thumbnail sketches are not always accurate. One suggestion made to alleviate this problem was to include in the GFM examples of all types of illustrations to be used. The contractor would then be aware of the quality of artwork demanded. Another possible solution would be to require that reviewers who have final approval of the lessons follow the artwork from the beginning stages and request changes to be made along the way to the finished product.

This idea of demanding reactions to artwork at periodic stages of lesson design and development from the individuals who are charged with the ultimate approval of the lesson can be applied to revisions of all parts of the lesson. However, the major hindrance is the great number of reviewers involved within the military hierarchy. The large amount of input makes for many lesson additions and revisions. Resolution of conflicting ideas plus the short time period allowed for review, plus the fact that some schools are understaffed and inexperienced can create an overload situation which delays the schools' turn-around-time with lessons. Two possible improvements to the current state-of-affairs would be to extend the time period allowed for review, and/or reduce the number of authorized reviewers. Several respondents suggested that only the SME be delegated the responsibility for review and approval of final products.

One final note - many of the various tasks and skills required of enlisted personnel are currently taught through TEC lessons. In order for the soldier to take maximum advantage of available lessons, his/her time must be managed to allow systematic access to the material. Several respondents advocated that TEC lessons be considered when planning or

structuring a soldier's day, week, or month. A related consideration is the communication gap that seems to exist within the Army Continuing Education System about specific tasks covered by TEC lessons. There have been instances in which proposals have been solicited to develop instruction already contained in TEC lessons.

Problems specific to the various groups surveyed are summarized below.

TRADOC Schools

Selecting tasks for TEC

a) Task selection requires better front end analysis based on empirical evidence of need rather than set arbitrarily by a review board.

b) There is a problem in getting the task list empirically verified so that the subsequent task analysis will be correct.

Learning Centers

Demand for Lessons not in Stock

a) Some schools report receiving lessons out of sequence.

b) Those schools near the end of the distribution list do not receive all the lessons they require.

c) There is a time lag of 90 days between request for lessons and delivery.

Contractors

a) Managerial problems in working with subcontractors.

b) Co-ordinating artists on types of equipment, colors, uniforms to draw.

NTEC

Contractor Selection

a) Establishment of specific quality standards within the RFP is critical so that morethan a minimum effort on the part of the contractor is assured.

b) Contractors sometimes delay delivery of the final products when the cost of production has exceeded that stated in the contract, thereby forcing the government to make additional payments.

Summary and Conclusions

It was noted in this study that the most common problem area mentioned by the groups surveyed revolved around school/contractor differences. Because of the significant impact this relationship has on the success of the TEC contract, the establishment and maintenance of rapport between school and contractor was viewed as vital. Problems were evident at virtually every stage of lesson design and development. Various methods for improving this relationship within the different problem areas were discussed. Problems specific to each group were then summarized.

Although it may appear that a multitude of problems exist within the TEC design, development and evaluation process, the positive aspects seem to outweigh the bad. In general, problems were judged by respondents not to be monumental and a majority of those interviewed had most problems resolved to their satisfaction. As one respondent stated "TEC lessons, even at their lowest quality are better than any other instructional material in the Army."